Before the
Federal Communications Commission
Washington, DC

In the Matter of	)	
	)	
International Comparison And Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act	)	GN Docket No. 09-137

COMMENTS OF
CBEYOND, COMPTEL, COVAD, INTRADO,
NUVOX AND TW TELECOM
IN RESPONSE TO NBP PUBLIC NOTICE # 25

On December 1, 2009, the Commission released Public Notice # 25 asking whether a Notice of Inquiry (NOI) should be issued to address questions arising from the inevitable transition from a circuit-switched PSTN to an IP-based network.[1] Specifically, the *Public Notice* asks "which policies and regulatory structures may facilitate … the efficient migration to an all IP world."[2] These comments address a single issue critical to the full realization of an "all-IP" future – that is, the replacement of today's TDM-based interconnection and traffic exchange agreements between incumbent local exchange

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1 Comment Sought on Transition from Circuit-Switched Network to All-IP Network, NBP Public Notice # 25, GN Docket Nos. 09-47, 09-51, and 09-137, DA 09-2517 (rel. Dec. 1, 2009 ("*Public Notice*").

2 *Ibid.* at 2.

carriers ("ILECs") and entrants with comparable arrangements in IP-form. Importantly, the regulatory structure most important to this transition is one that already exists and applies – *i.e.,* the interconnection and traffic exchange obligations of the federal Communications Act ("Act") as set forth in sections 251 and 252.

As explained in more detail in the attached letter submitted September 22, 2009,[3] the Act sets forth the appropriate framework to govern the negotiation and implementation of modern IP-based traffic exchange arrangements. Section 252 of the Act calls for carriers to negotiate interconnection arrangements and publicly file the agreed terms with state utility commissions for approval. Such agreements, once reached, are then available to other parties through section 252(i).

Recognizing the enormous share-advantages and dominant position of the incumbent local exchange carriers, the Act also includes a regulatory backstop – arbitration under section 252 – where the incumbent and entrant cannot agree. In this way, an independent third party (*i.e*., the state commission or, in certain circumstances, the FCC) resolves disputes without regard to the private interests of the individual parties, but in furtherance of the public interest.

Significantly, these key provisions of the Act are not dependent upon any particular technology. For instance, section 251(c)(2) specifically provides requesting

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[3] *See* September 22, 2009 Letter from William H. Weber, Cbeyond, et. al. to Marlene H. Dortch, Federal Communications Commission GN Docket No. 09-51 ("*IP Interconnection Ex Parte*"), attached hereto as Attachment A.

carriers the right to interconnect with an incumbent's network at "any technically feasible point." Nothing in the Act limits its application to the network facilities of the ILECs as they stood in 1996. By allowing interconnection at "any technically feasible point," the Act's obligations and protections remain as technology evolves. Consequently, any NOI issued by the Commission should recognize that the Act has *already* answered the fundamental question as to what regulatory structure should govern interconnection and traffic exchange between IP-networks, and the Commission should limit its focus to whether additional rules are needed to provide greater definition and effect.[4]

The Commission has experienced similar technology transitions, with the *Public Notice* referencing the transition from analog mobile service to digital mobile service, and from analog broadcast television to digital broadcast television. The transition most relevant to this issue, however, is the invisible transition that occurred as the nation moved from a largely analog-based public switched telephone network to the digital network that exists today.[5] Significantly, the transition between these technologies was implemented without any material change in interconnection policy.

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[4] For instance, end-office conversions from IP-to-TDM will still be required in those ILEC networks that have deployed IP technology for transport, but which still serve many end-users using circuit switches. It will take many years before all circuit-switches are removed from the network, but IP-to-IP interconnection does not need to await that end-point. So long as the ILEC has deployed IP-transport facilities, IP-to-IP interconnection can occur, even if some IP-to-TDM conversions are required to reach some end-users. These transitional considerations, however, do not diminish the larger conclusion that the Act governs interconnection and traffic exchange obligations in a technologically neutral manner.

[5] When the Commission first established detailed "interconnection" requirements for long distance competition (such as the various Feature Group access arrangements that interconnected long distance networks to the local exchange), the PSTN was largely characterized by analog transmission and in-band signaling. Over the years, this analog architecture was replaced with digital transmission and switching, and in-band signaling was replaced by Signaling System 7

Unfortunately, some ILECs are seeking to use the transition from a circuit-switched architecture to IP technology to evade their interconnection and traffic exchange obligations under the Act. For instance, Verizon recently responded to a request by Bright House Networks for an interconnection agreement that would include the exchange of telecommunications traffic in IP format as an "outrageous" demand,[6] asserting that Bright House has no legal right to an IP-based exchange of traffic because (according to Verizon) "IP-to-IP interconnection will evolve just as the Internet has – via voluntary commercial agreements."[7]

The Internet, however, did not have as its starting point a market dominated by incumbent local exchange carriers that are the product of decades of statutorily-protected monopolies. As the Commission's most recent local competition report shows, incumbent local exchange carriers still serve over 80% of the local market, with the remaining share divided among multiple competitors.[8] The mere fact that an incumbent has changed its network architecture from a circuit-based to IP-format does not change its

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(SS7). These changes were no less fundamental than today's transition from a TDM-based to an IP-based digital network.

[6] Verizon Florida LLC's Response to Bright House Networks Information Services (Florida) LLC's Petition for Arbitration of Interconnection Agreement, Florida Public Service Commission Docket No. 090501-TP, filed December 7, 2009 ("*Verizon Response*"), at 6.

[7] *Ibid*. Verizon's position ignores the fact that the Act also embraces negotiation as the favored means of reaching agreement between entrants and incumbents. Where the Act's call for negotiation differs from Verizon's view of "commercial negotiation," however, is that the Act does not reward an incumbent's refusal to accept reasonable terms with stalemate, but rather provides for arbitration to resolve any dispute.

[8] Local Telephone Competition: Status as of June 2008, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, July 2009 at Table 1.

market position, and the important interconnection and non-discrimination protections of the Act do not disappear just because Verizon says they should.[9]

Preserving the Act as technology changes is no small matter. Non-discriminatory interconnection and traffic exchange arrangements are fundamental to achieving the nation's transition to an all-IP network. Verizon's assertion that IP-interconnection is "voluntary" is simply a polite way to claim that it may deny – or, equally troubling, define – interconnection on its own terms. Even AT&T acknowledges that imposing unnecessary TDM-architectural requirements discourages investment in more efficient IP-based technologies:

> The impact of COLR [carrier of last resort] obligations is exacerbated by the fact that, in many states, COLR requirements are defined by reference to a particular technology or include obligations (such as equal access requirements) that presume a particular network architecture – that is, TDM. These requirements effectively force carriers of last resort to continue investing capital to maintain their legacy, TDM networks – capital that could be used to deploy next generation broadband network facilities and services.[10]

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[9] The *Verizon Response* raises secondary issues concerning technical aspects of IP-to-IP interconnection that are ancillary to the fundamental concern expressed here. Regardless of the merits (or lack thereof) of Verizon's technical positions regarding specific contract language or the interconnection configuration proposed by Bright House, the relevant issue is Verizon's threshold position that it has no legal obligation to interconnect in IP-form to exchange traffic and will only do so under terms that Verizon has decided further its private interest. It is not the purpose of these comments to address these secondary issues raised by Verizon, including its remarkable claim that it does not have an IP-based network in Florida (*Verizon Response* at 6), despite Verizon's listing of multiple packet switches and call agents in the Local Exchange Routing Guide (LERG). These issues pose factual questions (for instance, identifying how many Verizon wire centers are reachable with its IP transport network) and, to the extent they remain in dispute, the arbitration provisions of the Act establish an appropriate forum for resolution.

[10] Comments of AT&T Inc. – NBP Public Notice # 19, Federal Communications Commission GN Docket Nos. 09-47, 09-51, and 09-137, December 7, 2009 at 20. Without accepting AT&T's claim that its so-called COLR obligations are a burden, we agree with its underlying point that forcing TDM-investment where it is no longer needed deters next generation investment that would further the Commission's aims here.

AT&T clearly understands the consequences of waste when regulatory requirements (allegedly) require that they invest in antiquated TDM facilities. Such waste is even more unjustified when the product of an incumbent's unilateral demand that interconnection is only available through obsolete technologies. There is no legal basis for Verizon's assertion that the Act's interconnection obligations are frozen with TDM-technology as it existed in 1996. Consequently, the Commission should make clear that the *predicate* to its NOI is a technology-neutral Communications Act and limit its questions to how best implement the unambiguous interconnection requirements of sections 251/252.

Respectfully submitted,

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ATTACHMENT A

September 22, 2009

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: In the Matter of a National Broadband Plan. GN Docket No. 09-51

Dear Ms. Dortch:

The purpose of the National Broadband Plan is to identify policies and actions that would encourage broadband deployment and adoption throughout the United States.[1] As part of that task, the Commission should work to eliminate any unnecessary barriers to the deployment and expansion of next generation (NextGen) networks.[2]

Consistent with this goal, the undersigned carriers come together to ask the Commission to ensure that the National Broadband Plan makes clear that the interconnection and traffic exchange obligations of the Telecommunications Act continue to apply even as networks transition from circuit-switched to packet-based technology. In doing so, the Commission will prevent possible gamesmanship and remove a potential barrier to the full utilization – and, therefore, further deployment – of advanced telecommunications networks.

The circuit-emulation capabilities of next generation technology are transforming the public switched telephone network ("PTSN") to an all packet-network, just as the PSTN previously evolved from analog to digital transmission as that technology developed.[3] Substantial segments of the PSTN already have been replaced with NextGen technology, particularly in the transport network. It is estimated that 90% of the interLATA PSTN has been replaced by IP technology, and 60% of the intraLATA PSTN as well.[4]

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[1] American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) (Recovery Act).

[2] Next Generation technology enables carriers to define specific class-of-service policies to minimize latency and assure quality. This ability means that next generation facilities can transport real-time voice services alongside data services in packet-based format without sacrificing quality, reliability or security.

[3] As AT&T describes, the nation is in the midst of an "inevitable transition from a narrow-band, voice-centric infrastructure to the broadband, any-application infrastructure of the 21st century." *See* Ex Parte Letter from Robert W. Quinn, Jr., Senior Vice President, Federal Regulatory, AT&T Services, Inc., to Chairman Kevin Martin, Federal Communications Commission, CC Docket No. 01-92, July 17, 2008 at 1.

[4] Presentation of Carl Ford, Vice President, Crossfire Media, to National Association of Regulatory Utility Commissioners, Staff Telecommunications Subcommittee, February 14, 2009. It is a mistake to judge the importance of NextGen networks to the PSTN solely by the much

In the initial stages of deployment, NextGen networks typically have been required to convert traffic to legacy TDM-format prior to delivering it to the incumbent LEC. The ILEC has required such conversions even where the incumbent itself has deployed NextGen facilities and could otherwise transport the traffic in packet form on its own network.[5] Such conversions require unneeded media-gateways at the network edge, in addition to SS7 signaling. In some instances, back-to-back conversions are used such that traffic ultimately is carried in packet-form, even though TDM arrangements are required at the point of traffic exchange. Requiring a NextGen network to convert traffic to legacy circuit-switched form as a condition of interconnection and traffic exchange with another NextGen transport network increases cost, reduces quality and discourages the wider deployment of NextGen networks by diverting investment to what is, at best, a valueless activity.

Directing scarce investment capital to unnecessary media gateways is wasteful and counterproductive. Such conversions are nothing more than engineering "busy work," adding no value. Every dollar diverted to an unnecessary task is a dollar that would otherwise be available to expand the carrier's NextGen network, increasing the availability of advanced services. In addition to being inefficient, the unnecessary conversions impose higher operational costs by requiring carriers to manage both the logical networks that define the NextGen architecture and the physical networks that characterize the legacy approach. Finally, converting NextGen packets to a TDM bit rate – only to be converted back to NextGen form for transport in the ILECs' own NextGen network – reduces voice quality through unnecessary protocol conversion.

No matter the perspective, imposing back-to-back conversions solely so that voice traffic may be exchanged between NextGen transport networks is to turn one's back on the future. Some of the highest-capacity network links in existence are the interconnection facilities between incumbents and their competitors. The national commitment to a broadband future requires that all such networks exchange voice traffic in modern, packet, form wherever possible.[6]

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smaller count of *end-users* that subscribe to NextGen voice services offered by incumbents, when the most relevant measure is the amount of overall capacity that is now operating in IP form. As noted, large portions of the PSTN have converted to next generation transport facilities, even where end-users continue to subscribe to circuit-switched services. Over time, as the number of subscribers served by soft-switches and other IP-devices increases, the level of end-to-end packet services will become increasingly more important. That trend (*i.e.*, the growth of end-user services), however, should not be confused with the ongoing substitution of next generation access and transport facilities within the network overall.

[5] For instance, Verizon has been replacing legacy switches with Nortel's Succession Packet Switches, yet combines the architecture with trunk gateways so that carriers must continue with traditional interconnection. *See* Notice of Network Change, Verizon, June 15, 2004. Similar changes have been announced in other states.

[6] In some instances, ILECs may be operating parallel packet and TDM networks and, as such, do not *necessarily* perform back-to-back conversions when they choose to direct

Unfortunately, some incumbents have suggested that competitors have no statutory rights under Sections 251 and 252 of the Act if they want to interconnect and exchange traffic directly in packet form. The ILEC position appears to be that Sections 251/252 only apply in the increasingly obsolete TDM world, and hence competitors must hand off traffic in TDM to retain the oversight and the regulatory backstop (where negotiations fail) provided for by the Act.[7]

A year ago, for example, USTA argued this position on behalf of its members in opposing a NARUC resolution on this subject. NARUC nevertheless rejected the USTA view. It found that "carriers are substituting Next Generation Network technology in order to reduce the costs of providing voice telecommunications services" and resolved to protect "carriers' interconnection rights and traffic exchange obligations, under Sections 251 and 252, in a technologically neutral manner."[8]

Any further debate concerning the application of 251/252 can easily be avoided by the FCC simply making clear, as did NARUC, that the interconnection and traffic exchange obligations of the Act *are* technology neutral and do not disappear as packet-based facilities are deployed and used for the transport and termination of telecommunications traffic.

Providing this statement does not require that the Commission establish any new law or policy, but that does not make it any less important. Such action by the Commission will foster the goals of the National Broadband Plan by removing any potential for further ILEC obfuscation or delay in interconnecting efficiently with packet-based networks of competitors.[9] The Telecommunications Act is deliberately

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interconnected traffic to legacy facilities. As a general policy, however, the Commission should be *encouraging* the network's migration to packet technology and competitors should not be limited to TDM interconnection and TDM facilities when a packet alternative has been deployed. Although conversion to TDM may be necessary at the end-office for those subscribers of TDM-based services, that fact alone does not mean that IP-transport cannot be utilized to reach the end-office prior to conversion and termination through the switch.

[7] Of course, ILECs and competitors could today negotiate interconnection for packet-based traffic without regulatory involvement. But the Act also ensures that the backstop of Section 251 and 252 would continue to protect against ILEC abuse of market power. This is consistent with the Commission's conclusions that ILECs retain market power in this area. *See* notes 11-13 *infra* and accompanying text. The ILECs do so notwithstanding technology changes in how traffic is transported.

[8] *See* NARUC Resolution Regarding the Interconnection of New Voice Telecommunication Services Networks, adopted by NARUC Board of Directors, July 23. 2008, and "NARUC Telecom Committee Adopts 'Interconnection Rights' Resolution," *Telecommunications Reports*, July 22, 2008.

[9] It is useful to note that this discussion does not address interconnection and nondiscrimination obligations (if any) that should apply to Internet traffic. The mere fact that NextGen facilities may *also* support Internet services, however, does not relieve such facilities

technology-neutral. For instance, Section 251(c)(2) specifically provides requesting carriers the right to interconnect with an ILEC's network at "any technically feasible point." Nothing in that statute limits its application to the network facilities of the ILECs as they stood in 1996. To the contrary, by allowing interconnection at "any technically feasible point," the Act contemplates that, as technology evolves, the scope of what is "feasible" also will evolve.[10]

Moreover, the Telecommunications Act imposes a duty on the part of both the ILEC and the requesting interconnecting carrier to exchange traffic for transport and termination on a reciprocal basis. *See* Section 251(b)(5). This provision is also technologically neutral, and therefore creates an obligation on the part of one carrier to accept and transmit the NextGen voice traffic of another on reasonable and reciprocal terms. There is nothing in the Telecommunications Act to suggest that any of its provisions disappear as new technologies replace the old.

The FCC has properly taken pains to preserve network interconnection obligations, even in situations where it otherwise has been willing to give ILECs regulatory relief. For example, the Commission recently granted certain ILECs forbearance from regulation of their packet-switched broadband services.[11] But at the same time, the FCC made clear that this relief did not in any way impact the ILECs' interconnection obligations under Section 251 and 252. As the Commission observed, interconnection obligations "foster the open and interconnected nature of our communications system, and thus promote competitive market conditions" in the public interest.[12] Similarly, the FCC stated in the *Omaha Forbearance Order* that eliminating

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from the interconnection and traffic exchange obligations relating to telecommunications traffic under the Telecom Act.

[10] Furthermore, the Telecommunications Act provides that ILECs must provide operators of NextGen networks the same quality of interconnection that they provide to themselves and their affiliates. *See* Section 251(c)(2)(C). This non-discrimination standard was adopted to ensure that as network technology advances and is implemented in the ILEC network, other network operators can implement such technology and interconnect their voice networks on an economically efficient basis, notwithstanding the market power otherwise held by the ILEC. Thus, as ILECs interconnect their own NextGen network facilities, they also have an obligation to interconnect with third party CLECs.

[11] *Memorandum Opinion and Order, Petition of AT&T for Forbearance Under47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to its Broadband Service*s, FCC 07-180, at para.12 (Oct. 12, 2007) ("*AT&T Forbearance Order*"); *Memorandum Opinion and Order, Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as amended, for Forbearance from Certain Dominant Carrier Regulation of its Interstate Access Services and for Forbearance from Title II Regulation of its Broadband Services, in the Anchorage Alaska, Incumbent Local Exchange Carrier Study Area*, WC Docket No. 06-109, FCC 07-149, at para. 129 (rel. Aug. 20, 2007);

[12] *AT&T Forbearance Order*, supra, at para. 68.

interconnection-related obligations would give an ILEC "the ability to exercise market power over interconnection."[13]

Our request here does not go any farther than the FCC already has in terms of determining the boundary between information services (such as Internet services) and telecommunications services. The FCC has drawn a bright-line between the *carrier*-level functions of interconnection, transport and termination, and the regulatory classification of the *retail*-level services relying on such functions, concluding that the underlying right to interconnection remains whether or not the retail service is an information service.[14] Moreover, the Commission has also expressly found that the wholesale functions of interconnection, transport and termination are telecommunications services.[15] Thus, the FCC has resolved the regulatory classification of interconnection, transport and termination, by separating the question from the classification appropriate to the retail service and then concluding that these wholesale functions are telecommunications services under the Act.

In summary, the Commission should expressly acknowledge that the ubiquitous broadband networks that are the primary goal of the National Broadband Plan will be

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13 *Memorandum Opinion and Order, Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area*, WC Docket No. 04-223, 20 FCC Rcd 19415, para. 1 (2005), *aff'd Qwest Corp. v. FCC*, 482 F.3d 471 (D.C. Cir. 2007).

14 See *Memorandum Opinion and Order, Time Warner Cable Request for Declaratory Ruling that Competitive Local Exchange Carriers May Obtain Interconnection Under Section 251 of the Communications Act of 1934, as Amended, to Provide Wholesale Telecommunications Services to VoIP Providers*, 22 FCC Rcd 3513, DA 07-709 (March 1, 2007) ("*TWC Declaratory Ruling*") at ¶15 (emphasis added):

> The regulatory classification of the service provided to the ultimate end user has no bearing on the wholesale provider's rights as a telecommunications carrier to interconnect under section 251. As such, we clarify that the statutory classification of a third-party provider's VoIP service as an information service or a telecommunications service is irrelevant to the issue of whether a wholesale provider of telecommunications may seek interconnection under section 251(a) and (b). Thus, we need not, and do not, reach here the issues raised in the *IP-Enabled Services* docket, including the statutory classification of VoIP services.

15 See *TWC Declaratory Ruling* at ¶ 2 (emphasis added):

> TWC purchases wholesale telecommunications services from certain telecommunications carriers, including MCI WorldCom Network Services Inc. (MCI) and Sprint Communications Company, L.P. (Sprint), to connect TWC's VoIP service customers with the public switched telephone network (PSTN). MCI and Sprint provide transport for the origination and termination on the PSTN through their interconnection agreements with incumbent LECs. In addition, MCI and Sprint provide TWC with connectivity to the incumbent's E911 network and other necessary components as a wholesale service. (*Id*).

comprised of multi-service next generation facilities that will support both Internet services and telecommunications services. To the extent such facilities are used for the latter, these networks must comply with the interconnection and nondiscrimination obligations of the Telecommunications Act. In this way, NextGen facilities will efficiently become part of the nation's evolving PSTN, for the benefit of all Americans.

Respectfully submitted,

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